

Private protected areas in Australia: current status and future directions

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Abstract

Despite the recognised importance of private land for biodiversity conservation, there has been little research into systems of private protected areas at a country-wide level. Here I look at definitions, legislation, ownership, management approaches and effectiveness, distribution and incentives provided to private protected areas in Australia. The term ‘private protected areas’, although increasingly used, still suffers from a lack of a clear and concise definition in Australia. Australian states and territories have legislation enabling the application of conservation covenants over private land; covenants being the primary mechanism to secure conservation intent on the title of the land in perpetuity. If considering all ‘in perpetuity’ conservation covenants under a dedicated program to be private protected areas and land owned by non-government organisations and managed for the purpose of biodiversity conservation, there were approximately 5,000 terrestrial properties that could be considered private protected areas in Australia covering 8,913,000 ha as at September 2013. This comprises almost 4,900 conservation covenants covering over 4,450,000 ha and approximately 140 properties owned by private land trusts covering approximately 4,594,120 ha. Most conservation covenanting programs now seek to complement the comprehensiveness, adequacy and representativeness of the public reserve system, either stating so explicitly or by aiming to protect the highest priority ecosystems on private land. There are a range of incentives offered for private land conservation and requirements of owners of private protected areas to report on their activities vary in Australia. However, there are a number of key policy challenges that need to be addressed if private protected areas are to achieve their full potential in Australia, including managing broad-scale ecosystem processes, protection and tenure reform, improved financial incentives, and access to emerging ecosystem service markets.

Keywords

National Reserve System, conservation covenants, private reserves, land trusts, legislation, ownership, incentives

Introduction

The commitment by most countries to expand the protected area estate in a representative and well-connected manner, as part of the Convention on Biological Diversity's Aichi Target 11, will require the inclusion of a range of protection mechanisms over a variety of tenures, including protected areas over private land (Woodley et al. 2012). Despite their potentially important role in biodiversity conservation, recognition of the role of private protected areas has suffered from sparse data, loose definitions and lack of integration into other protected area estates (Stolton et al. 2014). In a recent global review of private protected areas, Stolton et al. (2014) suggested Australia had a 'well developed' and 'vibrant' system of private protected areas (along with other countries such as Brazil, Chile, Colombia, Mexico, South Africa and the USA). Here, I look at the development of the private protected area estate in Australia, which has seen a dramatic growth in area and number of properties permanently protected for nature conservation, but has received little attention in the literature. Specifically I address the definitions, outline the legislation, ownership, management approaches and effectiveness, distribution and incentives provided to private protected areas on the Australian continent, highlight challenges and suggest future directions.

In Australia, the conservation of biodiversity on private land has been an important policy objective for the past few decades (e.g., Commonwealth of Australia 1996; Natural Resource Management Ministerial Council 2009, 2010). While there are multiple mechanisms used to achieve this, conservation covenants and land acquisition are the primary mechanisms used to protect natural assets on private land in the long-term (Fitzsimons and Wescott 2001; Figgis et al. 2005; Cowell and Williams 2006; Pasquini et al. 2011). A conservation covenant is a binding agreement (usually entered into on a voluntary basis) between a landowner and an authorised body to help the landowner protect and manage the environment on their property. There is a variety of conservation covenanting mechanisms with supporting programs that currently exist in Australia. Conservation covenanting programs vary across Australia, based on the jurisdiction and the legislation under which they are established. All of these are statutory mechanisms, with the covenants established through specific legislation. The programs have a variety of origins, the oldest being established in the late 1970s in Victoria (although the first 'wildlife refuge' was signed in the 1950s in New South Wales) and some more recent programs that have only been operating in the last few years.

The Australian National Reserve System is a national network of public, Indigenous and private protected areas over land and inland freshwater. Its focus is to secure long-term protection for samples of Australia's diverse ecosystems and the plants and animals they support. It is recognised that the National Reserve System

cannot be built solely on public lands and there is a significant role for Indigenous groups, local communities, private landholders and non-government organisations to play in establishing and managing protected areas to ensure the success of the National Reserve System. The Australian Government has played an important role in growing the private land trust sector in Australia over the past 20 years (land trusts being non-government organisations owning and managing land for conservation). Specifically, the provision of up to two-thirds of the purchase price for strategic land acquisitions through the National Reserve System program has seen land owned by this sector grow from thousands of hectares in the mid-1990s to millions of hectares today. It has also resulted in significantly increased involvement and investment from the philanthropic sector in the establishment of new private protected areas (Humann 2012; Taylor 2012; Taylor et al. 2014).

How is a private protected area defined in Australia?

The term ‘private protected areas’, although increasingly used, still suffers from a lack of a clear and concise definition in Australia. In this paper, land held for conservation by Indigenous people and groups while substantial in Australia (Rose 2012) are not considered ‘private’ for the purpose of protected area governance classifications. Rather they are considered to fall into the ‘Indigenous’ governance category of the IUCN’s protected area framework (Dudley 2008). The only *nationally agreed* definition of private protected area is that developed by the Natural Resource Management Ministerial Council (NRMMC) for *Australia’s Strategy for the National Reserve System 2009–2030* (NRMMC 2009). The Natural Resource Management Ministerial Council, which consisted of the Australian Commonwealth, state, territory and New Zealand government ministers responsible for primary industries, natural resources, environment and water policy, stated “A fundamental requirement of any area’s eligibility for inclusion within the National Reserve System is that it must meet the IUCN definition of a ‘protected area’ (Dudley 2008)” (NRMMC 2009, p. 42). The Natural Resource Management Ministerial Council (2009, p. 42) defined further ‘Standards for inclusion in the National Reserve System’ with three standards applying generally across all tenure types and a fourth (dealing with security) specific to different tenures (i.e. public, private, Indigenous) (Table 1).

The Natural Resource Management Ministerial Council (2009, p. 43) provides further definition of the term ‘legal or other effective means’ for the purposes of inclusion in the National Reserve System:

1. Legal means: Land is brought under control of an Act of Parliament, specialising in land conservation practices, and requires a Parliamentary process to extinguish the protected area or excise portions from it.
2. Other effective means: for contract, covenant, agreements or other legal instrument, the clauses must include provisions to cover:

Table 1. Standards for inclusion in the National Reserve System (source: Natural Resource Management Ministerial Council 2009).

Standards	Description
Valuable	<ul style="list-style-type: none"> • must enhance the comprehensiveness, adequacy and representativeness of the National Reserve System • must be established and managed for the primary purpose of protection and maintenance of biological diversity with associated ecosystem services and cultural value
Secure through legal or other effective means	<p><i>Public</i></p> <ul style="list-style-type: none"> • must be statutorily defined and resourced <p><i>Private</i></p> <ul style="list-style-type: none"> • must be reserved in perpetuity • any change in management status must have Ministerial or statutory approval <p><i>Indigenous</i></p> <ul style="list-style-type: none"> • must have customary law protection with Traditional Owners holding a non-transferable interest in the land with a commitment to its long-term protective management • must be a commitment from Traditional Owners to discuss any changes with the Minister
Well-managed	<ul style="list-style-type: none"> • must be classified and managed in accordance with one or more IUCN management categories (I–VI) • must be adaptively managed to minimise loss of biodiversity values • effectiveness of management must be monitored and evaluated in a manner open to public scrutiny
Clearly defined	<ul style="list-style-type: none"> • the area must be able to be accurately identified on maps and on the ground

- long-term management – ideally this should be in perpetuity but, if this not possible, then the minimum should be at least 99 years;
- the agreement to remain in place unless both parties agree to its termination;
- a process to revoke the protected area or excise portions from it is defined; for National Reserve System areas created through contribution of public funding, this process should involve public input when practicable;
- the intent of the contract should, where applicable, be further reinforced through a perpetual covenant on the title of the land; and
- ‘well-tested’ legal or other means, including non-gazetted means, such as through recognised traditional rules under which Indigenous Protected Areas (community conserved areas) operate or the policies of established non-government organisations.

This definition largely reflects previous definitions of the Natural Resource Management Ministerial Council (2005) in its *Directions for the National Reserve System – A Partnership Approach* with the exception of the last point which is new to the ‘Strategy’. Fitzsimons (2006) provided a detailed analysis of how each private land conservation mechanism in the State of Victoria met the definition of private protected area (based on the Natural Resource Management Ministerial Council 2005 definition), however it does not appear that similar analyses have been carried out for other jurisdictions.

Nonetheless, conservation covenants, land purchased by non-government organisations through the National Reserve System Program, and less frequently, areas protected

by special legislation or under the National Parks legislation, are the main ‘types’ of private protected areas in Australia and this is the focus of the discussion below.

However, it should be recognised, that despite the definitions above, the term ‘private protected areas’ is often used more broadly for private land conservation mechanisms that include a legislative or contractual component (even if not in perpetuity) or generally for land owned by conservation land trusts or similar.

Legislation that addresses private protected areas in Australia

In Australia, as the environment was not listed as an item in the Australian constitution at Federation, state and territory governments are primarily responsible for environmental management and relevant legislation (Wescott 1991). This includes protected area legislation to enable the creation of public protected areas (typically ‘National Parks Acts’). The states and territories also have legislation enabling the application of conservation covenants over private land; covenants being the primary mechanism to secure conservation intent on the title of the land in perpetuity. Some states have more than one piece of legislation that enables conservation covenants, and the Australian Government also has a mechanism that allows covenants to be signed, although this is little used. The conservation covenanting programs and their respective legislation are presented in Table 2.

Where financial assistance has been given to non-government organisations to purchase land for conservation through the Australian Government’s National Reserve System program, protection takes two main forms. Firstly, there is a funding agreement between the Australian Government and non-government organisation which specifies the purpose of the property being for biodiversity conservation, the management activities to be undertaken and activities which are not appropriate. There is provision in many of these agreements for funding to be returned if provisions are not met. Critically there is a requirement in all contracts for a conservation covenant (or similar) to be signed between the non-government organisation with the relevant state/territory covenanting agency as soon as possible after purchase.

In South Australia, the government has proposed to amend the *National Parks and Wildlife Act 1972* to allow the establishment of National Parks and Conservation Parks on private freehold and leasehold lands (Leaman and Nicolson 2012). In this proposal the land owner would enter into an agreement with the Minister, the park would be declared and a notation would be included on the land title. Under this model, National Parks and Conservation Parks on private land would remain under the control and management of the landholder in accordance with a management plan prepared by the owner and approved by the Minister. However, the terminology met with resistance and as a result of the feedback, current thinking is to amend the proposal to maintain the underlying concept, but move away from the terms ‘National Park’ and ‘Conservation Park’. The term ‘Private Reserve’ seems to have broader acceptance and is being considered as an alternative (Leaman and Nicolson 2012).

Table 2. Covenanting programs in Australian jurisdictions and primary legislation.

Jurisdiction	Program	Legislation
Australian Government	Conservation Agreements †	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
Western Australia	National Trust of Australia (WA) Covenanting Program	<i>National Trust of Australia (WA) Act 1964</i> and <i>Transfer of Land Act 1893</i>
Western Australia	Nature Conservation Covenant Program	<i>Conservation and Land Management Act 1984</i> and <i>Transfer of Land Act 1893</i>
Western Australia	Soil and Land conservation covenants	<i>Soil and Land Conservation Act 1945</i>
South Australia	South Australian Heritage Agreement Program	<i>Native Vegetation Act 1991</i>
Victoria	Trust for Nature (Victoria) conservation covenants	<i>Victorian Conservation Trust Act 1972</i>
Victoria	Land Management Co-operative Agreements	<i>Conservation, Forests and Lands Act 1987</i>
Tasmania	Private Property Conservation Program (Now includes sub programs of Protected Areas on Private Land (PAPL) and Non-Forest Vegetation Program)	<i>Nature Conservation Act 2002</i> and <i>Land Titles Act 1980</i>
New South Wales	Voluntary Conservation Agreements Program	<i>National Parks and Wildlife Act 1974</i>
New South Wales	Wildlife Refuges	<i>National Parks and Wildlife Act 1974</i>
New South Wales	Nature Conservation Trust covenants	<i>Nature Conservation Trust Act 2001</i>
New South Wales	NSW Registered Property Agreements Program	<i>Native Vegetation Act 2003</i>
Queensland	Queensland Nature Refuge program	<i>Nature Conservation Act 1992</i> and <i>Nature Conservation (Protected Areas) Regulations 1994</i>
Queensland	Voluntary conservation agreement programs operated by south-east Queensland councils, including Gold Coast, Sunshine Coast, Moreton Bay, Brisbane and Logan Local Governments	<i>Queensland Land Title Act 1994</i>
Northern Territory	Voluntary conservation covenant program	<i>Parks and Wildlife Commission Act 2004</i> and <i>Land Title Act 2007</i>

Notes: † Only a few Conservation Agreements signed under the *Environment Protection and Biodiversity Conservation Act* could be considered to be akin to a covenant – see <http://www.environment.gov.au/epbc/about/conservation-agreements.html#list>

Unlike most national parks in Australia, the establishment of a conservation covenant or purchase of a private reserve through the National Reserve System does not prevent minerals exploration or mining. This is because subsurface resources are owned by the state and are not part of a privately owned surface title. There have been recent threats to some private protected areas due to mining approvals being given by a state government, against the wishes of the private landholder (Adams and Moon 2013).

The Australian private protected area estate

Although Australia has a relatively comprehensive national database for recording the location, size and management intent (IUCN categories) of public protected areas and Indigenous protected areas, the national reporting of private protected areas is somewhat more *ad hoc* and is not comprehensive. Protected area data are compiled nationally every two years or so as part of the Collaborative Australian Protected Area Database (CAPAD) (Department of the Environment 2014). This generally involves state and territory governments providing spatial data and IUCN categories to the Australian Government which already holds data on Indigenous Protected Areas and land purchased through the National Reserve System Program, including private protected areas under this scheme. However, only some jurisdictions provide information on conservation covenants (in 2012 this was South Australia, Queensland and Tasmania). As such, gaining a comprehensive picture of the number and area of private protected areas in Australia is difficult.

I sourced data on property number and area conserved from each conservation covenanting program and major private land trusts in Australia in September 2013. If considering all 'in perpetuity' conservation covenants under a dedicated program to be private protected areas and land owned by non-government organisations and managed for the purpose of biodiversity conservation, there were approximately 5,000 terrestrial properties that could be considered private protected areas in Australia covering 8,913,000 hectares as at September 2013. This comprises almost 4,900 conservation covenants covering over 4,450,000 ha (Table 3) and approximately 140 properties owned by private land trusts covering approximately 4,594,120 ha (Table 4), and a small number of private protected areas owned by other organizations. Some of these large properties held by non-government organisations have covenants and where known these have been counted only once in deriving the total figure.

There are a number of other covenanting arrangements (or covenant-like arrangements) that may not qualify as private protected areas, but are effectively managed in the same way as other conservation covenants (Table 5). It is recognised that not all properties owned by private conservation trusts would necessarily qualify as private protected areas under the current National Reserve System criteria (mainly due to legal protection) however they are managed with this explicit intent and are moving towards greater security and many would be widely considered 'private protected areas'.

The size of private protected areas varies widely and is influenced by a number of factors, including size of historical subdivision of land parcels and amount of vegetation clearing in a region. Generally properties purchased by non-government organisations are larger than the average area covenanted by individual landowners. Covenanted land can be as small as ~1 ha while private reserves owned by non-government organisations can be in the hundreds of thousands of hectares.

In terms of total area, private protected areas make up a relatively small proportion of the overall area protected within Australia's National Reserve System, although this area and relative proportion has increased significantly since the year

Table 3. Number and area of major conservation covenanting programs in Australia (as at September 2013).

Covenanting program	Number	Total area (ha)	Average covenant size (ha)
Victoria: Trust for Nature covenants	1,242	53,370	43
NSW Voluntary Conservation Agreements	367	143,050	390
NSW Registered Property Agreements	237 †	44,150	186
NSW Nature Conservation Trust covenants	73	16,687	229
Tasmanian Private Land Conservation Program covenants	703 ‡	83,644	119
South Australian Heritage Agreements	1,518	643,631	424
Queensland Nature Refuges	453	3,438,004	7589
Western Australian (Department of Parks and Wildlife) covenants	169 §	17,386	103
Western Australian National Trust covenants	162	17,879	110
Northern Territory Conservation Covenants	2	640	320
TOTAL	4,926	4,458,441	905

Notes: † This does not include 99 Temporary Property Agreements covering ~8,450 hectares; ‡ Includes 39 covenants ‘time limited’ covenants covering 6,845 ha; § Number of landholders; | Area shown is area of bushland (natural habitat). Total area covenanted (included cleared land) is 64,381 ha.

Table 4. Number and area of private reserves owned by major non-profit conservation land owning organisations in Australia (as at 30 July 2013).

Organisation	Number of properties owned†	Total area (ha)	Average property size (ha)
Bush Heritage Australia	35	960,000	27,429
Australian Wildlife Conservancy	23	>3,000,000	130,400
Trust for Nature (Victoria) ‡	47	36,104	768
Nature Foundation SA	5	499,705	99,941
Nature Conservation Trust of NSW	12 §	10,182	849
Tasmanian Land Conservancy	11	7,283	662
South Endeavour Trust	7	80,646 ¶	11,506
TOTAL	137	4,518,530	

Notes: † Not all properties may have legal protection to the extent outlined earlier but all properties are effectively managed as private protected areas; ‡ In addition to this figure, 55 properties purchased by the Revolving Fund since its inception, and 52 have been on-sold, protecting 5,695 ha; § Currently holding but to be sold with covenant as part of revolving fund – a further 12 have been sold to supportive private owners, protecting 11,823 ha (included in covenant figures in Table 3; | All covenanted; ¶ The largest property, the 68,000 ha Kings Plains, is a mix of conservation and sustainable grazing.

2000 (Figures 1 and 2). As noted in above, data within CAPAD, which informs the governance types within the National Reserve System, is not complete for conservation covenants. Nonetheless, it does include most of the large private protected areas purchased with assistance from the National Reserve System program, as well as covenants from three states – South Australia, Queensland and Tasmania – which

Table 5. Conservation covenants or property agreements that due to either their level of security, allowable activities or primary intent would not qualify as private protected areas protected areas (as at September 2013).

Program	Number of agreements	Area (hectares)
Victorian covenants signed as part of BushTender under the <i>Conservation, Forests and Lands Act 1987</i>	44 †	1,500
New South Wales Wildlife Refuges ‡	672	1,890,000
New South Wales Conservation Property Vegetation Plans §	59	~6,570
New South Wales Biobanking agreements	21	3,170
Conservation covenants with the Western Australian Commissioner of Soil and Land Conservation ¶	57	5,685
‘Agreement to Reserve’ with the Western Australian Commissioner of Soil and Land Conservation #	441	30,880
Voluntary Conservation Agreement programs operated by south-east Queensland local governments	Unknown	Unknown

Notes: † Not all of these covenants have been completed (i.e. still in process of being put on-title); ‡ some of which are registered on the title but can be removed by the landholder; § For more information see <http://www.environment.nsw.gov.au/vegetation/pvp.htm>; | For more information see <http://www.environment.nsw.gov.au/biobanking/biobankframework.htm>; ¶ A Conservation Covenant, which is expressed to be irrevocable. The figures in the table relate to in perpetuity agreements – there are a further 46 set term agreements covering 3313 ha. Once finalised, the Commissioner does not have statutory authority to vary or discharge these covenants; # An Agreement to Reserve, which is not expressed as irrevocable. These covenants usually apply in perpetuity and may be varied or discharged by the Commissioner (there are 12 set term agreements covering 5549 ha). Thus from time to time, landowners may request the Commissioner to discharge these types of covenants. If the Commissioner refuses to discharge the covenant, there is facility under the Act to appeal the Commissioner’s decision.

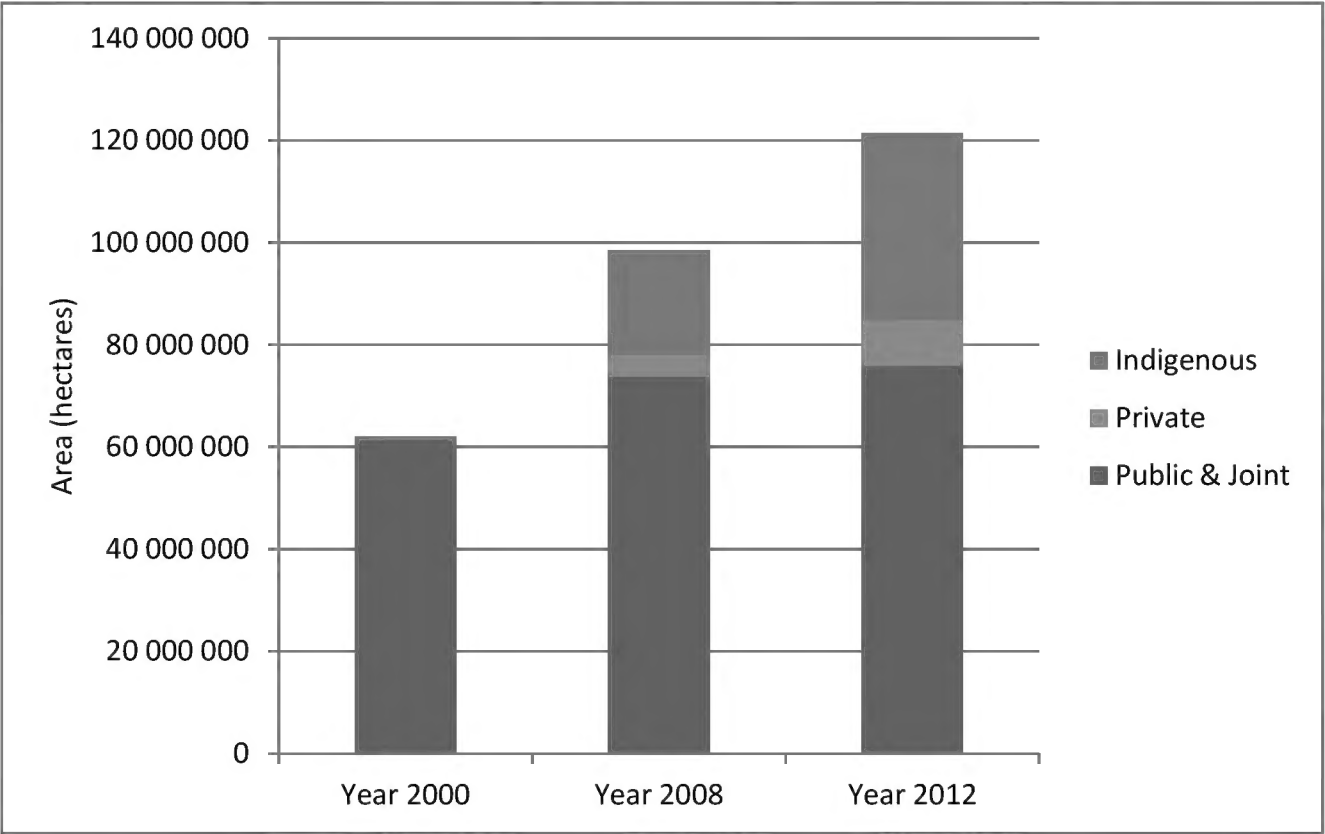


Figure 1. Increase in extent of protected areas in the National Reserve System between 2000 and 2012, including ownership type (data from the Collaborative Australian Protected Area Database 2000, 2008 and 2012 for public and Indigenous protected areas and from this paper for private protected areas).

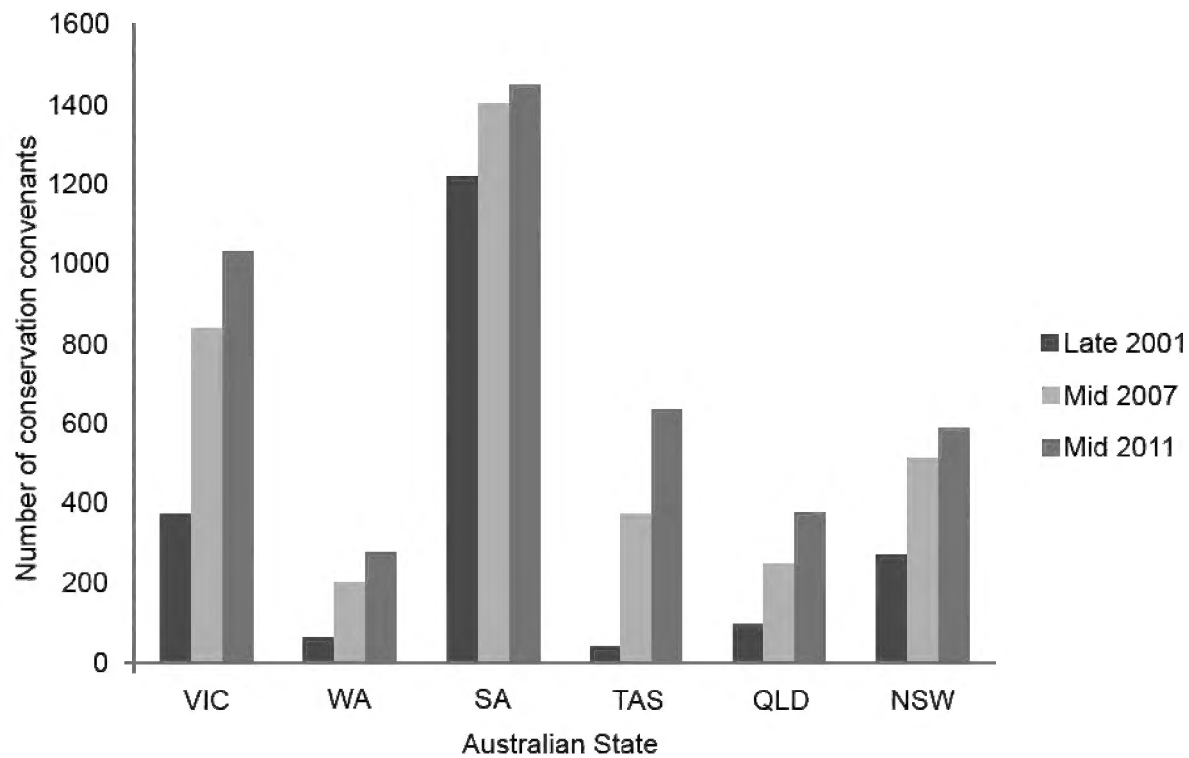


Figure 2. Number of conservation covenants in Australian States in 2001, 2007 and 2011. Note: represents covenants in programs listed in Table 3, with the exception of WA covenants in 2001 which includes those signed by AgWest (Department of Agriculture) (Stephens 2002) – these were not included in the 2007 and 2011 totals. The NSW area does not include Wildlife Refuges.

would comprise as significant majority of the total area under conservation covenant in Australia.

To address the gap in CAPAD, in 2009, the National Conservation Lands Database was compiled and included the majority of high security mechanisms operating on private land in Australia, where conservation is the sole or key objective. The data set contains all agreements from the inception of the program through which they were delivered to (and including) those established on 30 June 2009. The 2009 iteration of the database included summary statistics on number and area but, unlike CAPAD, polygon information for these covenants was not made publically accessible (see Figure 3). The objective was that this database would be updated annually but there has not been a publicly released version of the data since 2009 and it is unlikely that an update will be released in the near future.

There a number of factors that seem to be currently inhibiting this national reporting:

- 1) Privacy concerns for private landowners in revealing the location of their properties.
- 2) A lack of coordination/process between state government, Australian Government and covenanting agencies outside of the state nature conservation agency.
- 3) A lack of assessment as to whether covenants (generally or specifically) meet the protected area classification or National Reserve System inclusion criteria.

Nonetheless, each state covenanting program maintains their own database of covenants.

Ownership and occupation of private protected areas in Australia

Conservation covenants make up the majority of individual private protected areas in Australia and for most covenanted properties, people either live on or have the provision to live on the properties. In most cases it is private individuals or families that own properties with covenants over them. In many cases a covenant will be a smaller part of a larger property, such as a farm, that is not part of the protected area. In other cases there might be a specific zone within the covenant that recognises an existing or future house. Specific details about what is and what is not permitted on a covenanted private protected area is set out in the covenant document which is agreed upon by the landholder signing the covenant. Activities that might degrade the conservation value of the covenant generally are not permitted. The majority of covenants are not generally 'open access' as they are the property of a private individual and not generally dedicated for commercial purposes. For private protected areas owned by NGOs, there will often be a dedicated land manager living on the reserve, particularly in remote locations.

There are few private protected areas owned by 'for-profit groups' (companies) in Australia. A recent example is Henbury Station in central Australia, purchased by R.M. Williams Agricultural Holdings (Pearse 2012) whose intention for the property was both biodiversity conservation and carbon sequestration (by removing stock from this former pastoral station). Despite being purchased with funds from the Australian Government's National Reserve System Program, the hopes for a tradeable carbon sequestration credits from the property were not realised and the property was recently sold and less than 20 per cent will be formally protected within a conservation covenant (Brann and Brain 2014). Earth Sanctuaries Ltd was the first publicly listed company in Australia to have wildlife conservation as its primary goal, owning 11 private reserves covering c. 100,000 ha at its peak of land ownership (these properties would not have technically qualified as private protected areas under the current terminology, but were effectively managed with this intent). Earth Sanctuaries sought to generate income by placing a monetary value on the threatened species it owned (Sydee and Beder 2006). Yet, the company overestimated the revenue-generating potential of its extensive landholdings and suffered financial difficulties and was eventually delisted in 2006. The majority of its reserves were purchased by the Australian Wildlife Conservancy, but the demise created a potential loss in confidence in the private nature reserve system in Australia (Fitzsimons and Wescott 2002).

Ownership of private protected areas can change in a more deliberate way. For example, a number of private land trusts operate revolving funds whereby a property is purchased by the NGO and then on-sold with a conservation covenant attached. For example the Queensland Trust for Nature has protected more than 100,000 hectares of land in Queensland having acquired eleven 14 properties and sold 8 to private land owners with Nature Refuge agreements attached to title (Queensland Trust for Nature 2013). Private land trusts can also transfer private reserves into the public protected area estate: for example the Trust for Nature (Victoria) has transferred 65 properties to the Victorian Government in total comprising 6,745 ha.

There have been a smaller number of acquisitions by community groups, such as the Twin Creeks Community Conservation Reserve (Department of the Environment 2013). There are also emerging hybrid models of private protected areas with other governance types. For example Fish River Station in the Northern Territory was purchased by the Indigenous Land Corporation with financial support from the Australian Government's National Reserve System program and two NGOs, The Nature Conservancy and Pew Environment Group (Fitzsimons and Looker 2012). It is a private protected area, but will be handed back to the Traditional Owners in the future. On Cape York, a consolidated program of land acquisition and tenure resolution of public land has seen the delivery of 580,000 ha of new national parks, and 703,000 ha of Aboriginal land, of which 90,000 ha are managed as Queensland Nature Refuges (conservation covenants) (Leverington 2012).

Almost all marine waters in Australia are owned by the Crown (government) and there are no private protected areas in the marine environment.

Main management approaches and IUCN categories

For public protected areas in Australia, IUCN categories are determined by the jurisdiction which manages the protected areas, primarily the state/territory governments. This is often done in accordance with guidance from state level documents (e.g. Department of Natural Resources and Environment 1996), the *Draft Australian Handbook for the Application of IUCN Protected Area Management Categories* (WCPA Australian and New Zealand Region 2000) and more recently the revised international guidelines (Dudley 2008). These data are compiled nationally every two years or so as part of the Collaborative Australian Protected Area Database. The application of these categories to private protected areas has been a somewhat more *ad hoc* approach. An analysis of CAPAD 2010 reveals that South Australia classified all their Heritage Agreements (conservation covenants) as category III (although Leaman and Nicolson (2012) suggested they are reported to the Australian Government as category VI), Queensland as category VI (with the exception of a small number as category II) and Tasmania a mix of categories Ia and VI.

For conservation covenants, the National Conservation Lands Database noted that many agencies were not confident that their interpretation of an IUCN category for their agreements was consistent with a national approach and some agencies assessed each covenant individually while others coded all agreements of a particular type the same way.

For purchases made under the National Reserve System Program, early advice from the Australian Government's environment department to non-government organisations purchasing private conservation lands was to assign private reserves as category IV. However, a review of private conservation lands in Victoria suggested that private protected areas could potentially fall in any of the IUCN protected area management categories (Fitzsimons 2006). Indeed a recent purchase of the

180,000 ha Fish River Station in the Northern Territory has seen this property classified as category II (Fitzsimons and Looker 2012) and other land acquisitions in Gondwana Link corridor are also classified as IUCN category II (Bush Heritage Australia 2013).

The current application of IUCN protected area management categories to private protected areas in Australia is in need of review, as is a national discussion of the implications of the classifications. Although the National Reserve System Strategy (Natural Resource Management Ministerial Council 2009, p. 4) recognised the need for “consistent approaches informed by the development of national frameworks for management effectiveness and protected areas on private lands”, little progress has been made to date. The formation of the Australian Land Conservation Alliance (<http://www.alca.org.au/>), made up of the main covenanting land trusts and The Nature Conservancy will seek to engage discussion on topics such as this.

The distribution and landscape context of private protected areas in Australia

Up until the mid-1990s, the public protected area system in Australia was typically created from existing public land, which itself was often the ‘left overs’ from land not suitable to use for agriculture. Typically this was steep and forested country or marginal desert country (Pressey and Tulley 1994; Pressey et al. 1996). The advent of the National Reserve System Program and scientific principles of comprehensiveness, adequacy and representativeness saw a much more targeted approach to reserve creation, with an emphasis on filling gaps and targeting the inclusion of under-represented ecosystems (Fitzsimons and Wescott 2004). The role of conservation non-government organisations is considered by the Australian Government as “critical, as they complement the public reserves by filling conservation gaps, purchasing or covenanting land where governments are unable to do so” (DSEWPC 2013). The Natural Resource Management Ministerial Council also recognise that many threatened species and under-represented communities occur on private land that is not for sale, but that farmers and graziers are increasingly placing voluntary, in perpetuity covenants on their property.

Most conservation covenanting programs were established before the concepts of comprehensiveness, adequacy and representativeness were explicit in conservation policy in Australia. Nonetheless, in a review of conservation covenanting programs in 2007, Fitzsimons and Carr (2014) found that most programs now seek to complement the comprehensiveness, adequacy and representativeness of the public reserve system, either stating so explicitly or by aiming to protect the highest priority ecosystems on private land.

Gilligan and Syneca Pty Ltd (2007) found that the Tasmanian Private Forest Reserve Program, one of the few covenanting programs where financial payments were made to landholders to secure new covenants, “made a significant contribution to achieving the conservation outcomes set out in the Tasmanian Regional Forest Agreement by

securing in perpetuity more than 40,000 hectares of private forests targeted in the Strategic Plan for the Program” (see also Iftekhar et al. 2014).

However, it should be recognised that covenants are generally established for a range of reasons beyond just complementing the comprehensiveness, adequacy and representativeness of the reserve system. It is often the landholders themselves that approach a covenanting agency to have a covenant placed on their property to ensure the natural assets on their property are protected when the property is sold or passed down to their heirs. Fitzsimons and Wescott (2001) found that there were clusters of small covenants (and other less secure private land conservation mechanisms) on the vegetated outskirts of larger regional population centres in Victoria. More recently, the Trust for Nature (2013) has shown how a more targeted approach to covenant establishment has significantly increased the proportion of covenants in under-represented bioregions.

New private protected areas may also be established with the explicit aim of buffering (Coveney 1993) or linking (e.g. Bradby 2013) existing protected areas. Fitzsimons and Wescott (2005) and case studies within Fitzsimons et al. (2013a) highlight the catalysing role of land purchase by non-government organisations in establishing new connectivity conservation initiatives in a region.

In a number of state jurisdictions, covenanting of leasehold land, which makes up a significant proportion of inland Australia, is significantly harder than covenanting freehold land (due to conflicts in management intent and required use of land between covenant and pastoral lease legislation). This means that at a national level covenants are more skewed towards freehold properties in eastern and southern Australia and Tasmania (Figure 3).

Incentives for establishment and maintenance of private protected areas

There is a range of incentives offered for private land conservation, including the establishment of private protected areas, however these differ across the country and differ within states. For non-government organisations purchasing land a significant financial incentive to establish new private protected areas was provided by the Australian Government through the National Reserve System Program, which offer two-thirds of the purchase price (the National Reserve System Program had a dedicated fund for land acquisition from the mid-1990s up until December 2012 when it was not renewed – Fitzsimons et al. 2013b).

At a national level, tax concessions are available to land owners who enter into conservation covenants (with an approved covenanting program) to protect areas of high conservation value. To qualify for an income tax deduction all of the following conditions must be met (DSEWPC 2012):

- The covenant must be entered into on or after 1 July 2002.
- The covenant must be entered into over land which the landholder owned – leased property is not eligible.

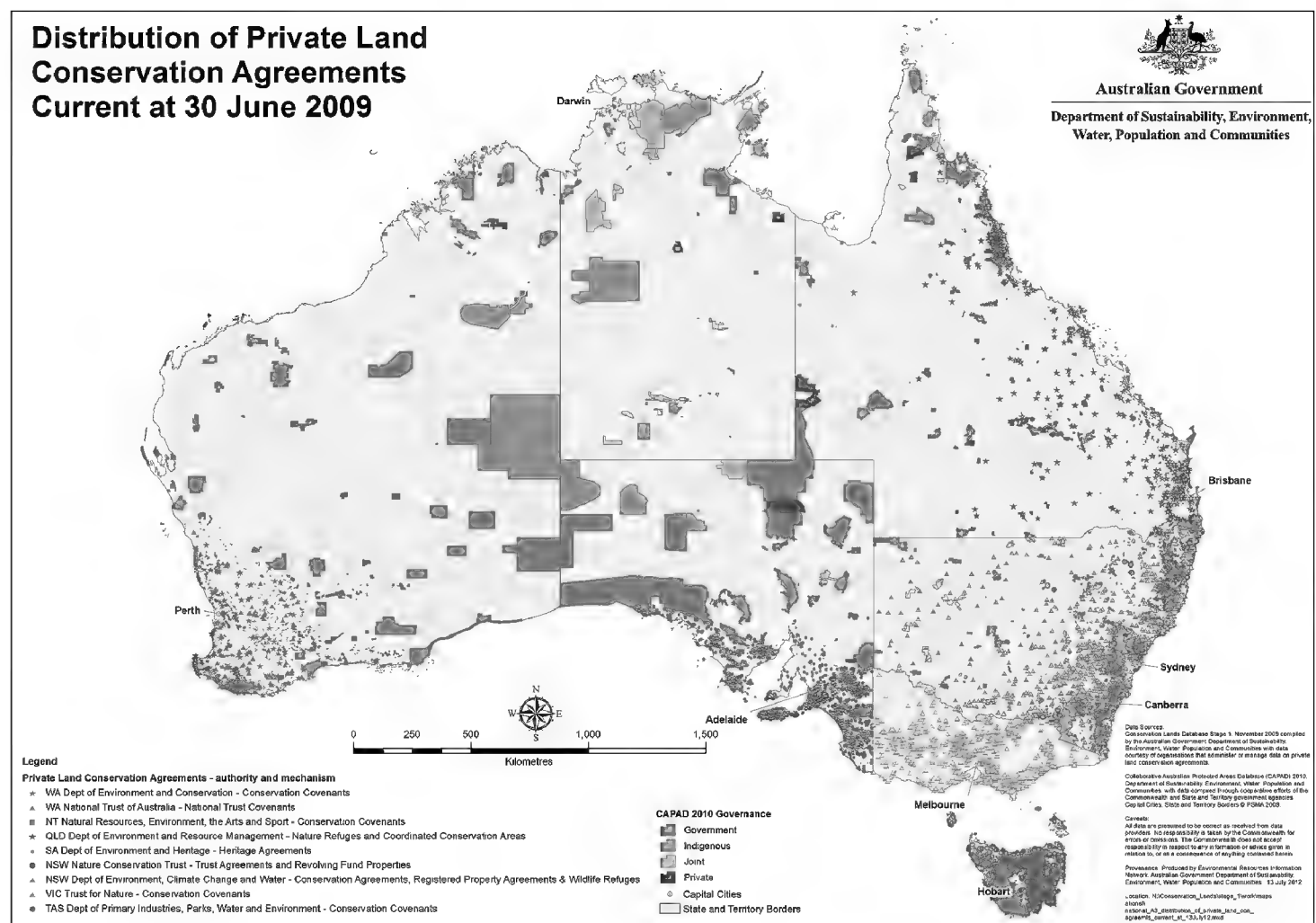


Figure 3. Distribution of conservation covenants (and other protected areas) in Australia as 30 June 2009 (source ERIN 2012).

- The covenant entered into must be perpetual.
- The landholder must not receive money, property or any other material benefit for entering into the covenant.
- The covenant must be entered into with a deductible gift recipient.
- The market value of the land must decrease as a result of entering into the covenant.

The change in the market value of the land must be more than \$5000 due to the covenant. If the decrease in value of the land is less than \$5000, the owner will only be eligible for a deduction if the land was acquired not more than 12 months before entering into the covenant and had meet all the above conditions.

Essentially, the deduction is equal to the gap between market value after the covenant and that prior to the covenant; that is the decline in value due to the encumbrance on title. This change in value is determined by the Australian Government's Valuer-General not by the actual market.

The Nature Conservancy (2008), in its submission to Australia's Future Tax System Review made the following observations in relation to tax incentives for private land conservation at a national level:

"The tax treatment of gifts of property, and the establishment of conservation covenants was substantially improved in the last decade, with recognition of the value of the donation allowable as a tax deduction, apportionable over up to 5 years. However,

this mechanism along with the changes in income tax marginal rates has resulted in lower incentives for a group of donors who own land, but who may have a low income. Land-rich, cash-poor landholders will not realise the full value of the tax deductibility as will a more affluent landholder. Anecdotal evidence suggests the low uptake of land-owners seeking a tax concession for any of loss in value on their property as a result of the covenant was in part due to the costly and bureaucratic nature of the valuation with little guarantee of a real loss in property value. This provision is also inconsistent with the broad message given by covenanting programs that a covenant does not usually result in a loss in property value (see Fitzsimons and Carr 2007)."

Property rates are charged by local governments in Australia and some local governments offer a partial or full rate rebates for covenanted properties. This rate relief varies significantly across the country and within states. There has been a significant increase in incentive payments, to encourage the signing of covenants in high priority, under-represented bioregions in the past decade (Adams et al. 2014). Where there are open calls or tenders for funding conservation activities on private land within a region, covenants will often receive a higher priority over shorter-term conservation agreements, all else being equal. However, within the last decade there has been a focus on stewardship payments for shorter-term (e.g. 5 to 15 years) management agreements (Wardrop and Zammit 2012). Further research is needed to determine if certain landholders are less likely to sign up to long-term covenants even if incentive payments are available.

Reporting and measures of conservation or management effectiveness

Requirements of owners of private protected areas to report on their activities vary. As a condition of funding for land acquisition (such as through the National Reserve System Program) or management (such as through various stewardship payment programs), reporting is required.

For private protected areas purchased with funding from the National Reserve System program, the 'Funding Deed' requires Monitoring, Evaluation, Reporting and Improvement (MERI) plans be prepared for each property (Australian Government 2013). In addition to twice-yearly progress reporting, a final report is required at the completion of all tasks associated with setting up the land as a protected area and preparing for its long-term management. As National Reserve System Program land purchase projects have similar reporting requirements and a reasonably standard set of activities, a number of templates have been prepared. These templates and reports have a number of purposes, including:

- to report on key milestones and activities throughout the course of the project and to provide updated documentation relating to formalising the land as a protected area;
- to describe the contribution of the project to the comprehensiveness, adequacy and representativeness principles of the National Reserve System;

- to evaluate the effectiveness of the methodology and approaches used to establish the project as a protected area and to prepare for its long-term management; and
- to incorporate lessons learned into future work in the project and in the National Reserve System land purchase program.

If conservation covenants have received funds as part of covenant establishment, owners will typically have to report on the annual activities and outcomes. For those established without financial assistance the level of reporting required and stewardship capacity from the covenanting agency varies. In Victoria, as part of the Trust for Nature's Stewardship Program monitoring of conservation covenants is undertaken at least once every five years and reported in a stewardship report (Trust for Nature 2014). Management plans are written by Trust for Nature regional managers and or stewardship officers, in consultation with the landowners.

In a review of conservation outcomes of conservation covenanting programs across Australia, Fitzsimons and Carr (2014) found that the role of monitoring and types of monitoring varied widely. For example, monitoring programs ranged from the basic statewide to regional inventories, such as number and area of covenants and increase in growth in signing covenants per year, through to assessments of the contribution that covenants are making to the conservation estate at the bioregional level (e.g. enhancing representation and/or improving linkages in the landscape or buffering protected areas). Other monitoring measures included site-based assessments such as complying with the conditions of the covenant and various forms of ecological monitoring. Some programs did all of these, whereas others only undertook the broader assessment. In terms of on-ground ecological monitoring, the techniques and emphasis between programs varied and the purpose for doing this was more to inform management than to necessarily gain quantifiable ecological data suitable for statistical analysis. Some were using methods that were consistent or comparable with what was being used in the rest of the jurisdiction (i.e. elsewhere with the state nature conservation agency/parks service), unlike others that had a more simplified or more advanced version of what is used elsewhere in the state.

Some covenant programs had collected benchmark ecological information for most covenants at the time of signing and most programs now undertake this on the signing of new covenants. Site visits ranged from yearly to five-yearly or on an 'as-needs' basis. A lack of resources to monitor (staff numbers and time), knowing what to monitor, inconsistent monitoring methodologies, lack of benchmark data and length of time to see meaningful results from monitoring, were all considered potential barriers to evaluating the biodiversity conservation outcomes of conservation covenants (Fitzsimons and Carr 2014).

Future directions and challenges for private protected areas in Australia

As outlined above and elsewhere (e.g. Gilligan 2006), private protected areas are making an increasing contribution to the area and ecosystems conserved in Australia.

However, the sector faces some unique challenges which will need to be addressed if private protected areas are to achieve their full potential. Some of the most significant challenges and opportunities are outlined below:

Managing ecosystem processes: Like managers of public and indigenous protected areas, managers of private protected areas face challenges in managing ecosystem processes on their property that are often outside of their direct control (e.g. environmental flows for wetlands or floodplain ecosystems) or may be difficult due to the size of the property or capacity of the landowner (e.g. application of ecological burns; Halliday et al. 2012). Recognising this, a number of the non-government organisations have established programs that go beyond their property boundaries to manage processes and threats such as fire (Legge et al. 2011), pest plants and animals (Walsh et al. 2013), and improve connectivity (Edwards and Fox 2013) in the surrounding landscape. However, individual covenantors will have limited capacity to do this, and cooperation and alliances with government agencies, surrounding landholders and other groups not normally associated with conservation will be crucial.

Tenure reform and increased security for protection mechanisms: Most of the large private protected areas purchased for conservation by non-government organisations in north or central Australia occur on pastoral leases. This means that a) the primary purpose of the lease is not likely to be for conservation, b) placing a protective conservation covenant on the lease may be problematic due to an inherent conflict between the purpose of the lease and that of the covenant and c) some cattle or sheep grazing may be legally required regardless of whether this is ecologically desirable. Although some state governments do not enforce the pastoral conditions (or may insist on only a minimal area to be grazed), considering the Australian taxpayers through the National Reserve System program have paid two-thirds of the purchase price for the majority of these large properties, improved protection arrangements, tenure reform or both are required to ensure the security of these conservation investments into the future.

Reinstating a National Reserve System program with a dedicated fund: For the first time in almost two decades the Australian Government's National Reserve System Program, comprising a dedicated funding allocation and specialist policy and administrative unit was discontinued in late 2012. This program and associated policies were fundamental for driving significant strategic growth in Australia's protected area estate, on public, private and Indigenous land tenures. Taylor et al. (2014) believe it is highly unlikely that Australia can achieve its long-standing commitments to an ecologically representative National Reserve System without a reinstatement of this funding. Loss of a dedicated funding program will slow the growth of the private land trust sector for two reasons. Firstly, there is a need to be able to access funds quickly when desirable land comes on to the market. Secondly, the leverage model the National Reserve System encouraged was particularly popular with philanthropists as they saw their gift being matched by government. Other funding mechanisms such as smarter use of the substantial investments in offsets for development will also need to be considered if the private land trust sector is to continue to grow.

More consistent incentives for covenantors: As highlighted above, there is substantial variation in the types and amounts of financial assistance offered to covenantors

between, and even within, Australian jurisdictions. Some of this variation is justified, such as governments providing targeted payments for the establishment and management of under-represented ecosystems to meet national and international targets, often through tender-based approaches. However, in order to recognize the role covenantors are playing financially in protecting biodiversity and to legitimize this land use further, ensuring greater consistency in the rate relief offered to covenantors and providing tax deductibility for conservation management activities (similar as for those provided to primary producers) should be a priority for all levels of government.

Access to new markets for funding. Until recently, biodiversity and ecosystem services have largely been taken for granted. However, their value is increasingly recognised and payments for ecosystem services are emerging in Australia (Figgis et al. 2015). Some owners of private protected areas have already taken advantage of this. For example, the owners of Fish River Station are paid to implement traditional fires and reduce carbon emissions (Walton and Fitzsimons in press). However, there remains a distinct possibility that the majority of existing private protected areas will not be able to enter into some new payment for ecosystem service markets. This is because the ‘additionality’ they offer will be difficult to prove when they are already considered to have legally protected the ecological assets on their properties. Careful consideration of policy will be required to ensure those choosing to have their properties protected are not excluded from these markets and left potentially financially worse off than those participating in the markets, but choosing not to protect their properties. If not addressed this could create a significant disincentive for landholders considering entering into conservation covenants into the future.

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References

- Adams VM, Moon K (2013) Security and equity of conservation covenants: contradictions of private protected area policies in Australia. *Land Use Policy* 30: 114–119. doi: 10.1016/j.landusepol.2012.03.009
- Adams VM, Pressey RL, Stoeckl N (2014) Estimating landholders’ probability of participating in a stewardship program, and the implications for spatial conservation priorities. *PLoS ONE* 9: e97941. doi: 10.1371/journal.pone.0097941
- Australian Government (2013) NRS Land Purchase Project – MERI Plan template. <http://laptop.deh.gov.au/parks/publications/nrs/pubs/landpurchasemeriplan.doc>

- Bradby K (2013) Gondwana Link – 1000 kilometres of hope. In: Fitzsimons J, Pulsford I, Wescott G (Eds) *Linking Australia's Landscapes: Lessons and Opportunities from Large-scale Conservation Networks*. CSIRO Publishing, Melbourne, 25–35.
- Brann M, Brain C (2014) 'Large percentage' of Henbury money returns to taxpayers. Australian Broadcasting Corporation. <http://www.abc.net.au/news/2014-06-09/henbury-station-sold-carbon-farming/5509950>
- Bush Heritage Australia (2013) Fitz-Stirling Scorecard. Bush Heritage Australia, Melbourne. http://www.bushheritage.org.au/downloads/reserve_scorecards/FitzStirling_Scorecard_Ver2_2012-08.pdf
- Commonwealth of Australia (1996) National Strategy for the Conservation of Australia's Biological Diversity. Department of Environment, Sport and Territories, Canberra.
- Cowell S, Williams C (2006) Conservation through buyer diversity: a key role for not-for-profit land-holding organizations in Australia. *Ecological Management and Restoration* 7: 5–20. doi: 10.1111/j.1442-8903.2006.00242.x
- Coveney J (1993) Planning for areas adjacent to national parks in Victoria. *Urban Policy & Research* 11: 208–216. doi: 10.1080/08111149308551574
- Department of the Environment (2013) Twin Creeks Community Conservation Reserve. Department of the Environment, Canberra. <http://www.environment.gov.au/topics/land/nrs/case-studies/wa/twin-creeks>
- Department of the Environment (2014) CAPAD: protected area data. <http://www.environment.gov.au/topics/land/nrs/science-maps-and-data/capad>
- Department of Natural Resources and Environment (1996) IUCN Categories and Other Key Datasets for Parks and Conservation Reserves in Victoria. National Parks and Reserves Branch, National Parks Service, Department of Natural Resources and Environment, Melbourne.
- DSEWPC (2012) Tax concessions for landowners who enter into conservation covenants. <http://www.environment.gov.au/biodiversity/incentives/approved-programs.html>
- DSEWPC (2013) Conservation organisations. <http://www.environment.gov.au/topics/land/nrs/getting-involved/conservation-organisations>
- Dudley N (Ed.) (2008) Guidelines for applying protected area management categories. IUCN, Gland, Switzerland. doi: 10.2305/IUCN.CH.2008.PAPS.2.en
- Edwards R, Fox T (2013) Conservation Management Networks: The Gippsland Plains story. In: Fitzsimons J, Pulsford I, Wescott G (Eds) *Linking Australia's Landscapes: Lessons and Opportunities from Large-scale Conservation Networks*. CSIRO Publishing, Melbourne, 103–112.
- ERIN (2012) Distribution of private land conservation agreements: Current at 30 June 2009. Environmental Resources Information Network, Department of Sustainability, Environment, Water, Population and Communities, Canberra. <http://nrmonline.nrm.gov.au/downloads/mql:3249/content>
- Figgis P, Humann D, Looker M (2005) Conservation on private land in Australia. *Parks* 15(2): 19–29.
- Figgis P, Mackey B, Fitzsimons J, Irving J, Clarke P (Eds) (2015) *Valuing Nature: Protected Areas and Ecosystem Services*. Australian Committee for IUCN, Sydney.
- Fitzsimons J, Carr B (2007) Evaluation of the Effectiveness of Conservation Covenanting Programs in Delivering Biodiversity Conservation Outcomes. Report for the Australian

- Government's Department of Environment and Water Resources. Bush Heritage Australia, Melbourne, Australia.
- Fitzsimons J, Looker M (2012) Innovative approaches to land acquisition and conservation management: the case of Fish River Station, Northern Territory. In: Figgis P, Fitzsimons J, Irving J (Eds) *Innovation for 21st Century Conservation*. Australian Committee for IUCN, Sydney, 78–85.
- Fitzsimons J, Pulsford I, Wescott G (Eds) (2013a) *Linking Australia's Landscapes: Lessons and Opportunities from Large-scale Conservation Networks*. CSIRO Publishing, Melbourne.
- Fitzsimons J, Pulsford I, Wescott G (2013b) Lessons from large-scale conservation networks in Australia. *Parks* 19(1): 115–125. doi: 10.2305/IUCN.CH.2013.PARKS-19-1.JF.en
- Fitzsimons J, Wescott G (2001) The role and contribution of private land in Victoria to biodiversity conservation and the protected area system. *Australian Journal of Environmental Management* 8: 142–157. doi: 10.1080/14486563.2001.10648524
- Fitzsimons J, Wescott G (2002) Policy implications of the transfer of ownership of Scotia Sanctuary for the National Reserve System in Australia. *Environmental and Planning Law Journal* 19: 329–332.
- Fitzsimons JA (2006) Private Protected Areas? Assessing the suitability for incorporating conservation agreements over private land into the National Reserve System: A case study of Victoria. *Environmental and Planning Law Journal* 23: 365–385.
- Fitzsimons JA, Carr CB (2014) Conservation covenants on private land: Issues with measuring and achieving biodiversity outcomes in Australia. *Environmental Management* 54: 606–616. doi: 10.1007/s00267-014-0329-4
- Fitzsimons JA, Wescott G (2004) The classification of lands managed for conservation: existing and proposed frameworks, with particular reference to Australia. *Environmental Science & Policy* 7: 477–486. doi: 10.1016/j.envsci.2004.08.005
- Fitzsimons JA, Wescott G (2005) History and attributes of selected Australian multi-tenure reserve networks. *Australian Geographer* 36: 75–93. doi: 10.1080/00049180500050904
- Gilligan B (2006) *The National Reserve System Programme 2006 Evaluation*. Department of the Environment and Heritage, Canberra.
- Gilligan B, Syneca Consulting Pty Ltd (2007) *Review and Evaluation of the Tasmanian Private Forest Reserves Program*. Report for the Tasmanian Department of Primary Industries and Water, Hobart.
- Halliday L, Castley JG, Fitzsimons JA, Tran C, Warken J (2012) Fire management on private conservation lands: knowledge, perceptions and actions of landholders in eastern Australia. *International Journal of Wildland Fire* 21: 197–209. doi: 10.1071/WF10148
- Humann D (2012) A personal journey to innovation. In: Figgis P, Fitzsimons J, Irving J (Eds) *Innovation for 21st Century Conservation*. Australian Committee for IUCN, Sydney, 16–23.
- Iftekhhar MS, Tisdell JG, Gilfedder L (2014) Private lands for biodiversity conservation: review of conservation covenanting programs in Tasmania, Australia. *Biological Conservation* 169: 176–184. doi: 10.1016/j.biocon.2013.10.013
- Leaman G, Nicolson C (2012) Innovative measures for establishing protected areas on private lands in South Australia. In: Figgis P, Fitzsimons J, Irving J (Eds) *Innovation for 21st Century Conservation*. Australian Committee of IUCN, Sydney, 206–213.

- Legge S, Murphy S, Kingswood R, Maher B, Swan D (2011) EcoFire: restoring the biodiversity values of the Kimberley region by managing fire. *Ecological Management & Restoration* 12: 84–92. doi: 10.1111/j.1442-8903.2011.00595.x
- Leverington A (2012) Opportunities for enhancing conservation management and resilience through tenure resolution in Cape York Peninsula. In: Figgis P, Fitzsimons J, Irving J (Eds) *Innovation for 21st Century Conservation*. Australian Committee of IUCN, Sydney, 94–99.
- Natural Resource Management Ministerial Council (2005) *Directions for the National Reserve System: A partnership approach*. Natural Resource Management Ministerial Council, Canberra.
- Natural Resource Management Ministerial Council (2009) *Australia's Strategy for the National Reserve System 2009–2030*. Natural Resources Management Ministerial Council, Canberra.
- Natural Resource Management Ministerial Council (2010) *Australia's Biodiversity Conservation Strategy 2010–2030*. Commonwealth of Australia, Canberra.
- Pasquini L, Fitzsimons JA, Cowell S, Brandon K, Wescott G (2011) The establishment of large private nature reserves by conservation NGOs: key factors for successful implementation. *Oryx* 45: 373–380. doi: 10.1017/S0030605310000876
- Pearse R (2012) 'Henbury Station' – an industry perspective on financing conservation for carbon and biodiversity markets. In: Figgis P, Fitzsimons J, Irving J (Eds) *Innovation for 21st Century Conservation*. Australian Committee for IUCN, Sydney, 172–179.
- Pressey RL, Farrier S, Hager TC, Woods CA, Tully SL, Weinman KM (1996) How well protected are the forests of north-eastern New South Wales? – analyses of forest environments in relation to tenure, formal protection measures and vulnerability to clearing. *Forest Ecology and Management* 85: 311–333. doi: 10.1016/S0378-1127(96)03766-8
- Pressey RL, Tully SL (1994) The cost of ad hoc reservation: A case study in western New South Wales. *Australian Journal of Ecology* 19: 375–384. doi: 10.1111/j.1442-9993.1994.tb00503.x
- Queensland Trust for Nature (2013) History. <http://www.qtnf.org.au/history>
- Rose B (2012) Indigenous Protected Areas – innovation beyond the boundaries. In: Figgis P, Fitzsimons J, Irving J (Eds) *Innovation for 21st Century Conservation*. Australian Committee for IUCN, Sydney, 50–55.
- Stephens S (2002) *National Survey of Landholder Views on Conservation Covenants: Report on findings*. Bush for Wildlife, Canberra.
- Stolton S, Redford KH, Dudley N (2014) *The Futures of Privately Protected Areas*. IUCN, Gland, Switzerland.
- Sydee J, Beder S (2006) The right way to go? Earth Sanctuaries and market-based conservation. *Capitalism Nature Socialism* 17: 83–98. doi: 10.1080/10455750500505507
- Taylor MFJ, Fitzsimons J, Sattler P (2014) *Building Nature's Safety Net 2014: A decade of protected area achievements in Australia*. WWF-Australia, Sydney.
- Taylor P (2012) Daunting problems, exciting prospects – a personal reflection In: Figgis P, Fitzsimons J, Irving J (Eds) *Innovation for 21st Century Conservation*. Australian Committee for IUCN, Sydney, 24–29.

- The Nature Conservancy (2008) Submission to the review process for “Australia’s future tax system”. http://www.taxreview.treasury.gov.au/content/submissions/pre_14_november_2008/the_nature_conservancy.pdf
- Trust for Nature (2013) Trust for Nature’s Statewide Conservation Plan for Private Land in Victoria. Trust for Nature, Melbourne.
- Trust for Nature (2014) Frequently asked questions. <http://www.trustfornature.org.au/faqs/>
- Walsh P, Cowell S, Eccles S, Appleby M (2013) Beyond the Boundaries: Bush Heritage Australia’s approach to multi-tenure conservation. In: Fitzsimons J, Pulsford I, Wescott G (Eds) *Linking Australia’s Landscapes: Lessons and Opportunities from Large-scale Conservation Networks*. CSIRO Publishing, Melbourne, 175–183.
- Walton N, Fitzsimons J (in press) Payment for ecosystem services in practice – savanna burning and carbon abatement at Fish River, northern Australia. In: Figgis P, Mackey B, Fitzsimons J, Irving J, Clarke P (Eds) *Valuing Nature: Protected Areas and Ecosystem Services*. Australian Committee for IUCN, Sydney.
- Wardrop M, Zammit C (2012) Innovation in public policy for conservation of biodiversity. In: Figgis P, Fitzsimons J, Irving J (Eds) *Innovation for 21st Century Conservation*. Australian Committee for IUCN, Sydney, 56–65.
- WCPA Australia and New Zealand Region (2000) Application of IUCN Protected Area Management Categories: Draft Australian Handbook. World Commission on Protected Areas Australia and New Zealand Region. http://www.unep-wcmc.org/protected_areas/categories/australia.pdf
- Wescott GC (1991) Australia’s distinctive national parks system. *Environmental Conservation* 18: 331–340. doi: 10.1017/S037689290002258X
- Woodley S, Bertzky B, Crawhall N, Dudley N, Londono JM, MacKinnon K, Redford K, Sandwith T (2012) Meeting Aichi Target 11: What does success look like for protected area systems? *Parks* 18(1): 23–36. doi: 10.2305/IUCN.CH.2012.PARKS-18-1.SW.en